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Clinical and dermoscopic features of congenital melanocytic nevi

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KEYWORDS

Congenital melanocytic nevi
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ABSTRACT

Background Congenital melanocytic nevi (CMN) are nevomelanocytic nevi which are present at birth. In this study, we set out to determine the clinical and dermoscopic properties of CMN.
Methods A total of 239 lesions were diagnosed as CMN. Dermoscopic properties were noted. Age, sex, nevus location and nevus size of the patients were also collected from the patient records.
Results A total of 239 lesions were diagnosed as CMN in 239 patients (age ranged from 1 month to 63 years (20.79±13.76 yr); 114 [47.7%] males and 125 [52.3%] females). Most of the lesions were medium-sized CMN, followed by small and large ones. The most common localization was upper extremities (23.8%), followed by head and neck, back, and lower extremities respectively. Dark brown was the most common colour seen in dermoscopy (115 patients, 48.1%), followed by light brown (69 patients, 28.9%) and black (55 patients, 23%) respectively. The most common dermoscopic findings of CMN was hair follicles followed by dots (70%) and perifollicular hypopigmentation (51%).
Conclusions Our study describes the normal clinical and dermoscopic features of CMN. It should be kept in mind that, CMNs are quite common lesions, and melanomas can arise from them. Knowing and being familiar with the normal properties of these common nevi will help us determine whether a nevus is suspicious or not.

Introduction

Congenital melanocytic nevi (CMN) are nevomelanocytic nevi which are present at birth. Some CMN may not be visible at birth but they slowly become apparent.[1] CMN are usually asymptomatic and quite common. They are present in 1–6% of newborns and 2–6% of the general population.[2,3]

The most widely used classification of congenital nevi is based on their size, which subdivides the lesions into three groups: small (0–1.5 cm), medium (1.5–19.9 cm), and large (≥20 cm). It is known that large congenital nevi have a potential risk of malignant transformation, and the probable lifetime risk is quoted between 5% and 15%.[2–4] Typically, CMN are round or oval pigmented lesions with sharply demarcated borders. Their surface may be smooth, cerebriform, rugose, verrucous, or lobular. CMN often have a diffuse homogeneous brown color; however, some may have a multishaded pigment pattern, varying from light to dark brown.[5]

Dermoscopy is a widely used non-invasive technique which improves the diagnosis of pigmented and non-pigmented skin lesions. Specific dermoscopic criteria are described for different lesions, but variations can always be seen dermoscopically.[6,7] Dermoscopy of congenital nevi reveals a globular or homogeneous pattern, black or brown dots and globules, small milia-like cysts within the globules, and terminal hairs.[8] In this study, we tried to determine the clinical and dermoscopic properties of CMN.

Materials and method

In this study, clinical and dermoscopic pictures of 239 lesions were evaluated at a melanoma and pigmented lesions unit between February 13, 2002 and December 31, 2009. Clinical

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and dermoscopic pictures of the patients were collected from a digital dermoscope (Molemax II; Derma Medical Systems, Vienna, Austria).

A total of 239 lesions were diagnosed as CMN based on patient anamnesis and clinical findings. Only the nevi present at birth (according to the patient's or their parents' anamnesis) were included in the study. Digital images were recorded by digital dermoscope (Molemax II) with 30× magnification, 640×480 pixels resolution, and stored with JPEG compression. All the images were reevaluated using LCD monitors with 1280×768 pixels resolution.

Dermoscopical properties were evaluated according to the patterns proposed in "Dermoscopy concensus meeting via the internet",[9] and dermoscopic properties (global patterns (reticular, globular, homogenous, starburst, parallel, multicomponent, nonspecific), pigment network (typical, atypical), dots/globules, streaks, Blue-white veil, blotches, hypopigmentation, regression, vascular structures, etc) were determined. Age, sex, nevus location, nevus size and dermoscopic features of the patients were also noted.

Statistical analysis was performed using SPSS version 11.5 (SPSS Inc., Chicago, IL, USA).

Results

A total of 2913 patients were evaluated, and 239 lesions were diagnosed as CMN in 239 patients (8.2%). Patients' age ranged from 1 month to 63 years (20.79±13.76 yr), 114 (47.7%) were males and 125 (52.3%) were females.

Seventy-seven of the CMN were small-sized CMN, while 150 were medium-sized, and 12 lesions were grouped as large CMN (Figure 1). Most of the lesions were located on upper extremities (23.8%), followed by head and neck, back, and lower extremities respectively. Table 1 shows the distribution of the lesions.

Figure 1 A large congenital melanocytic nevi located on the back of a patient.

Dark brown was the most common colour seen in dermoscopy (115 patients, 48.1%), followed by light brown (69 patients, 28.9%) and black (55 patients, 23%) respectively. The most common dermoscopic findings of CMN was hair follicles. Hair follicles (Figure 2) were observed in 211 (88.3%) of the patients. The second most common dermoscopic finding was dots (70%), followed by perifollicular hypopigmentation (51%) (Figure 3) and small globules (46%). Hairpin vessels (3%) and parallel network (1%) were the least common dermoscopic findings. Dermoscopic findings of the CMNs are summarized in Table 2.

Table 1 Location of congenital melanocytic nevi.

Location	*n*	%
Upper extremities	57	23.85
Head & neck	54	22.59
Back	52	21.76
Lower extremities	45	18.83
Thoracal region	14	5.86
Abdominal region	14	5.86
Palmar region	2	0.84
Plantar area	1	0.42
Total	239	100.00

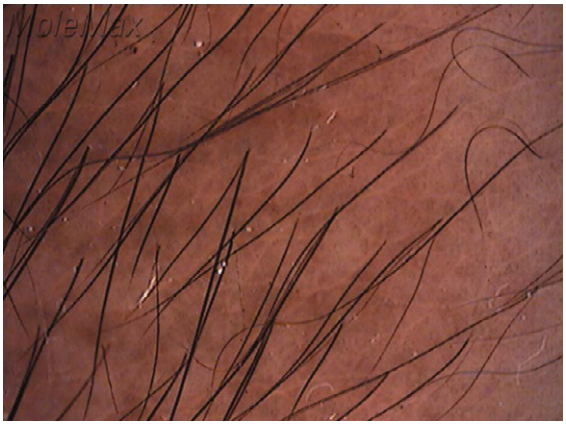

Figure 2 Hair follicles seen in a congenital melanocytic nevi.

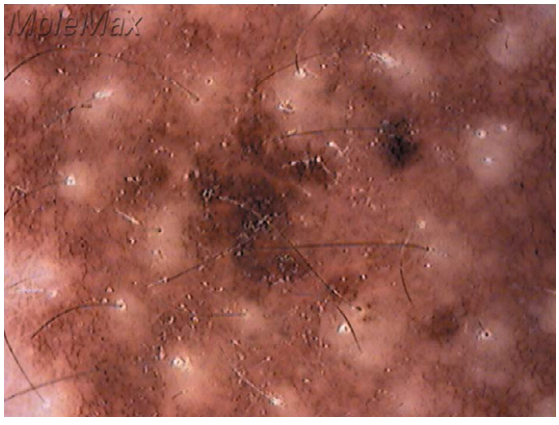

Figure 3 Perifollicular hypopigmentation seen in a congenital melanocytic nevi.

Table 2 Dermoscopic findings observed in congenital melanocytic nevi.

Dermoscopic finding	*n*	%
Hair follicles	211	88
Dots	168	70
Perifollicular hypopigmentation	121	51
Small globules	111	46
Pigment network	85	36
Big globules	77	32
Homogenous areas	49	21
Thickening of the network	48	20
Focal hypopigmentation	29	12
Blotch	23	10
Satellite lesions	12	5
Vessels	6	3
Parallel network	2	1

Discussion

CMN are nevomelanocytic nevi which are present at birth. Some CMN may not be visible at birth but they slowly become apparent and these CMN are named as "tardive CMN".[1] CMN form between the 5th and 24th week of gestation. Most of CMN occur sporadically.[10,11] The clinical diagnosis of CMN is quite easy. However, sometimes it may be difficult to diagnose. In such cases dermoscopy may be a very helpful tool. In addition, the risk of melanoma should be kept in mind in for large CMN. In this case, dermoscopy is again a very helpful diagnostic tool. In the present study, we determined clinical and dermoscopic properties of CMN in a large sample of patients.

A recent study by Changchien et al[2] showed a CMN population consisted of 47% females and 53% males. The population in the current study was shown to have a similar sex distribution (52.3% females, 47.7% males). In the study of Changchien et al[2] the most common lesions were small (62%), followed by medium (33%) and large CMN (5%). However, in our population, the most common size was medium lesions followed by small and large CMN.

Sahin et al[12] investigated only medium-sized CMN, and showed that the most common localization was head and neck, followed by anterior and posterior trunk. In our study, the most common localization of CMN was upper extremities followed by head and neck, back, lower extremities, thoracal region, abdominal region, and palmoplantar area.

The dermoscopic findings of acral CMN have not been well documented.[13] In the current study, lesions located on palmoplantar region ($n=3$) all showed parallel furrow pattern, and were all excised and found to be histologically benign.

In 2002, Seidenari et al[14] showed that the most common dermoscopic finding was hair follicles. In 2006, Seidenari et al reevaluated 384 small- and medium-sized CMN in a multicenter study, and showed that most common dermoscopic feature was hair follicles (76%), followed by perifollicular hypopigmentation (75%), network pattern (57%), small globules (54.7%).[15] In line with previous studies,[14,15] hair follicles, dots and perifollicular pigmentation were the most common dermoscopic properties in our study (Table 2). Because dots can be seen in many melanocytic lesions, we think that hair follicles and perifollicular pigmentation are very important in dermoscopic diagnosis of CMN.

Hair pin vessels rather than other patterns were observed in six lesions, and all lesions were excised and histologically proven to be benign. We suggest that if any suspicious dermoscopic features such as irregular networks or large globules were seen, it should be excised or at least biopsied to reduce the relatively low risk of malignant transformation to even lower.

Finding satellite areas presenting the same patterns of the main lesion may be very helpful to make the diagnosis of CMN dermoscopically (14). In our study we found satellites in 12 patients (5%).

In the present study, we evaluated 239 CMN, and described the normal clinical and dermoscopic features of CMN. It should be kept in mind that CMNs are quite common lesions, although they could give rise to melanomas. Being familiar with their normal clinical and dermoscopic properties of these common nevi will help us decide whether a CMN is suspicious or not. This may also reduce the number of unnecessary biopsies.

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